

Sequence Listing

Sequence Listing

5 <110> Chen, Jian
 Filvaroff, Ellen
 Goddard, Audrey
 Gurney, Austin
 Li, Hanzhong
 Wood, William I.

10 <120> IL-17 HOMOLOGOUS POLYPEPTIDES AND THERAPEUTIC USES
 THEREOF

15 <130> P1381-R1
 <141> 1999-05-14

20 <150> US 60/085,579
 <151> 1998-05-15

25 <150> US 60/113,621
 <151> 1998-12-23

30 <160> 26

<210> 1
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 <212> PRT
 <213> Homo sapiens

35 Met Asp Trp Pro His Asn Leu Leu Phe Leu Leu Thr Ile Ser Ile
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40 Phe Leu Gly Leu Gly Gln Pro Arg Ser Pro Lys Ser Lys Arg Lys
 20 25 30

Gly Gln Gly Arg Pro Gly Pro Leu Ala Pro Gly Pro His Gln Val
 35 40 45

50 Pro Leu Asp Leu Val Ser Arg Met Lys Pro Tyr Ala Arg Met Glu
 55 60

65 Glu Tyr Glu Arg Asn Ile Glu Glu Met Val Ala Gln Leu Arg Asn
 70 75

80 Ser Ser Glu Leu Ala Gln Arg Lys Cys Glu Val Asn Leu Gln Leu
 85 90

Trp Met Ser Asn Lys Arg Ser Leu Ser Pro Trp Gly Tyr Ser Ile
 95 100 105
 5 Asn His Asp Pro Ser Arg Ile Pro Val Asp Leu Pro Glu Ala Arg
 110 115 120
 Cys Leu Cys Leu Gly Cys Val Asn Pro Phe Thr Met Gln Glu Asp
 125 130 135
 10 Arg Ser Met Val Ser Val Pro Val Phe Ser Gln Val Pro Val Arg
 140 145 150
 Arg Arg Leu Cys Pro Pro Pro Pro Arg Thr Gly Pro Cys Arg Gln
 15 155 160 165
 Arg Ala Val Met Glu Thr Ile Ala Val Gly Cys Thr Cys Ile Phe
 170 175 180
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 cctcacaacc tgctgtttct tcttaccatt tccatcttcc tggggctggg 100
 30 ccagcccagg agccccaaaa gcaagaggaa ggggcaaggg cggcctgggc 150
 ccctggcccc tggccctcac caggtgccac tggacctggt gtcacggatg 200
 aaaccgtatg cccgcatgga ggagtatgag aggaacatcg aggagatggt 250
 35 ggcccagctg aggaacagct cagagctggc ccagagaaag tgtgaggtca 300
 acttgcagct gtggatgtcc aacaagagga gcctgtctcc ctggggctac 350
 40 agcatcaacc acgaccccag ccgtatcccc gtggacctgc cggaggcacg 400
 gtgcctgtgt ctgggctgtg tgaaccctt caccatgcag gaggaccgca 450
 gcatggtgag cgtgccggtg ttcagccagg ttctgtgcg ccgccgcctc 500
 45 tgcccgccac cgcccgcac agggccttgc cgccagcgcg cagtcatgga 550
 gaccatcgct gtgggctgca cctgcatctt ctgaatcacc tggcccagaa 600

gccaggccag cagcccgaga ccatactcct tgcacctttg tgccaagaaa 650

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<210> 3

<211> 197

<212> PRT

<213> Homo sapiens

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<400> 3

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Thr | Leu | Leu | Pro | Gly | Leu | Leu | Phe | Leu | Thr | Trp | Leu | His | Thr |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

15

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Leu | Ala | His | His | Asp | Pro | Ser | Leu | Arg | Gly | His | Pro | His | Ser |
| | | | | 20 | | | | | 25 | | | | | 30 |

20

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Gly | Thr | Pro | His | Cys | Tyr | Ser | Ala | Glu | Glu | Leu | Pro | Leu | Gly |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Ala | Pro | Pro | His | Leu | Leu | Ala | Arg | Gly | Ala | Lys | Trp | Gly | Gln |
| | | | | 50 | | | | | 55 | | | | | 60 |

25

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Leu | Pro | Val | Ala | Leu | Val | Ser | Ser | Leu | Glu | Ala | Ala | Ser | His |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Gly | Arg | His | Glu | Arg | Pro | Ser | Ala | Thr | Thr | Gln | Cys | Pro | Val |
| | | | | 80 | | | | | 85 | | | | | 90 |

30

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Arg | Pro | Glu | Glu | Val | Leu | Glu | Ala | Asp | Thr | His | Gln | Arg | Ser |
| | | | | 95 | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Ser | Pro | Trp | Arg | Tyr | Arg | Val | Asp | Thr | Asp | Glu | Asp | Arg | Tyr |
| | | | | 110 | | | | | 115 | | | | | 120 |

35

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Gln | Lys | Leu | Ala | Phe | Ala | Glu | Cys | Leu | Cys | Arg | Gly | Cys | Ile |
| | | | | 125 | | | | | 130 | | | | | 135 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Ala | Arg | Thr | Gly | Arg | Glu | Thr | Ala | Ala | Leu | Asn | Ser | Val | Arg |
| | | | | 140 | | | | | 145 | | | | | 150 |

40

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Leu | Gln | Ser | Leu | Leu | Val | Leu | Arg | Arg | Arg | Pro | Cys | Ser | Arg |
| | | | | 155 | | | | | 160 | | | | | 165 |

45

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Gly | Ser | Gly | Leu | Pro | Thr | Pro | Gly | Ala | Phe | Ala | Phe | His | Thr |
| | | | | 170 | | | | | 175 | | | | | 180 |

100T50-505550

Glu Phe Ile His Val Pro Val Gly Cys Thr Cys Val Leu Pro Arg
 185 190 195

Ser Val
 197

5

<210> 4

<211> 1047

<212> DNA

10 <213> Homo sapiens

<400> 4

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 15 tgacgctcct ccccggcctc ctgtttctga cctggctgca cacatgcctg 100
 gccaccatg acccctccct cagggggcac cccacagtc acggtacccc 150
 20 aactgctac tcggctgagg aactgcccct eggccaggcc cccccacacc 200
 tgctggctcg aggtgccaaag tgggggcagg ctttgctgt agccctgggtg 250
 tccagcctgg aggcagcaag ccacaggggg aggcacgaga ggccctcagc 300
 25 tacgaccag tgcccgggtgc tgcggccgga ggagggtgtg gaggcagaca 350
 cccaccagcg ctccatctca ccctggagat accgtgtgga cacggatgag 400
 30 gaccgctatc cacagaagct ggccttcgcc gagtgcctgt gcagaggctg 450
 tategatgca cggacgggce gcgagacagc tgcgctcaac tccgtgcggc 500
 tgctccagag cctgctggtg ctgcgccgcc ggccctgctc ccgcgacggc 550
 35 tcggggctcc ccacacctgg ggcctttgcc ttccacaccg agttcatcca 600
 cgtecccgtc ggctgcacct gcgtgctgcc ccgttcagtg tgaccgccga 650
 ggccgtgggg cccctagact ggacacgtgt gctccccaga gggcaccccc 700
 40 tatttatgtg tatttattgt tatttatatg cctcccccaa cactaccctt 750
 ggggtctggg cattccccgt gtctggagga cagcccccca ctgttctcct 800
 45 catctccagc ctcagtagtt gggggtagaa ggagctcagc acctcttcca 850
 gcccttaaag ctgcagaaaa ggtgtcacac ggctgcctgt accttggctc 900

agcccgagac catcctcctt gcacctttgt gcccaagaaag gcctatgaaa 800

agtaaact gacttttgaa agcaaaaaa 830

<210> 6

5 <211> 397

<212> DNA

<213> Artificial

<220>

10 <221> unknown

<222> 10, 150, 267

<223> unknown base

<400> 6

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ctcacaacct gctgtttctt cttaccattt ccatcttctt ggggctgggc 100

20 agccaggagc cccaaaagca agaggaaggg gcaagggcgg cctgggccc 150

tggcctggcc tcaccagggtg cactggacc tgggtgtcacg gatgaaaccg 200

tatgcccgc tggaggagta tgagaggaac atcgaggaga tgggtggcca 250

25 gctgaggaac agctcanaag ctggcccaga gaaagtgtga ggtcaacttg 300

cagctgtgga tgtccaacaa gaaggagcct gtctcccttg gggctacaag 350

30 catcaaccac cgaccccagc cgtatccccg tgggaccttg ccgggac 397

<210> 7

<211> 230

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40 gcagaggctg tatcgatgca cggacgggcc gcgagacagc tgcgtcaac 100

tccgtgcggc tgctccagag cctgctggtg ctgcgccgcc ggccctgctc 150

ccgcgacggc tcggggctcc ccacacctgg ggcctttgcc ttccacaccg 200

45 agttcatcca cgtccccgctc ggctgcacct 230

<210> 8

<211> 24

<212> DNA
 <213> Artificial sequence

<400> 8

5 atccacagaa gctggccttc gccg 24

<210> 9

<211> 24

<212> DNA

10 <213> Artificial sequence

<400> 9

gggacgtgga tgaactcggg gtgg 24

15 <210> 10

<211> 40

<212> DNA

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20 <400> 10

tatccacaga agctggcctt cgccgagtgc ctgtgcagag 40

<210> 11

<211> 155

25 <212> PRT

<213> Human

<400> 11

| | | | | | | | | | | | | | | | |
|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 30 | Met | Thr | Pro | Gly | Lys | Thr | Ser | Leu | Val | Ser | Leu | Leu | Leu | Leu | Leu |
| | 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | | |
|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | Ser | Leu | Glu | Ala | Ile | Val | Lys | Ala | Gly | Ile | Thr | Ile | Pro | Arg | Asn |
| | | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | | |
|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 35 | Pro | Gly | Cys | Pro | Asn | Ser | Glu | Asp | Lys | Asn | Phe | Pro | Arg | Thr | Val |
| | | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | | |
|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | Met | Val | Asn | Leu | Asn | Ile | His | Asn | Arg | Asn | Thr | Asn | Thr | Asn | Pro |
| | | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | | |
|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 40 | Lys | Arg | Ser | Ser | Asp | Tyr | Tyr | Asn | Arg | Ser | Thr | Ser | Pro | Trp | Asn |
| | | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | | |
|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 45 | Leu | His | Arg | Asn | Glu | Asp | Pro | Glu | Arg | Tyr | Pro | Ser | Val | Ile | Trp |
| | | | | | 80 | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | | |
|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | Glu | Ala | Lys | Cys | Arg | His | Leu | Gly | Cys | Ile | Asn | Ala | Asp | Gly | Asn |
| | | | | | 95 | | | | | 100 | | | | | 105 |

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15

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| | | | | |
|----|-----------------|---------------------|-------------------------|-----|
| | Arg Ser Met Val | Ser Val Pro Val Phe | Ser Gln Val Pro Val Arg | |
| | 140 | | 145 | 150 |
| 5 | Arg Arg Leu Cys | Pro Pro Pro Pro Arg | Thr Gly Pro Cys Arg Gln | |
| | 155 | | 160 | 165 |
| | Arg Ala Val Met | Glu Thr Ile Ala Val | Gly Cys Thr Cys Ile Phe | |
| | 170 | | 175 | 180 |
| 10 | Pro Asp Lys Thr | His Thr Cys Pro Pro | Cys Pro Ala Pro Glu Leu | |
| | 185 | | 190 | 195 |
| | Leu Gly Gly Pro | Ser Val Phe Leu Phe | Pro Pro Lys Pro Lys Asp | |
| 15 | 200 | | 205 | 210 |
| | Thr Leu Met Ile | Ser Arg Thr Pro Glu | Val Thr Cys Val Val Val | |
| | 215 | | 220 | 225 |
| 20 | Asp Val Ser His | Glu Asp Pro Glu Val | Lys Phe Asn Trp Tyr Val | |
| | 230 | | 235 | 240 |
| | Asp Gly Val Glu | Val His Asn Ala Lys | Thr Lys Pro Arg Glu Glu | |
| | 245 | | 250 | 255 |
| 25 | Gln Tyr Asn Ser | Thr Tyr Arg Val Val | Ser Val Leu Thr Val Leu | |
| | 260 | | 265 | 270 |
| | His Gln Asp Trp | Leu Asn Gly Lys Glu | Tyr Lys Cys Lys Val Ser | |
| 30 | 275 | | 280 | 285 |
| | Asn Lys Ala Leu | Pro Ala Pro Ile Glu | Lys Thr Ile Ser Lys Ala | |
| | 290 | | 295 | 300 |
| 35 | Lys Gly Gln Pro | Arg Glu Pro Gln Val | Tyr Thr Leu Pro Pro Ser | |
| | 305 | | 310 | 315 |
| | Arg Glu Glu Met | Thr Lys Asn Gln Val | Ser Leu Thr Cys Leu Val | |
| | 320 | | 325 | 330 |
| 40 | Lys Gly Phe Tyr | Pro Ser Asp Ile Ala | Val Glu Trp Glu Ser Asn | |
| | 335 | | 340 | 345 |
| | Gly Gln Pro Glu | Asn Asn Tyr Lys Thr | Thr Pro Pro Val Leu Asp | |
| 45 | 350 | | 355 | 360 |
| | Ser Asp Gly Ser | Phe Phe Leu Tyr Ser | Lys Leu Thr Val Asp Lys | |
| | 365 | | 370 | 375 |

Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His
 380 385 390

5 Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser
 395 400 405

Pro Gly Lys
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 <212> PRT
 <213> Artificial

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25 His Gly Thr Pro His Cys Tyr Ser Ala Glu Glu Leu Pro Leu Gly
 35 40 45

30 Gln Ala Pro Pro His Leu Leu Ala Arg Gly Ala Lys Trp Gly Gln
 50 55 60

Ala Leu Pro Val Ala Leu Val Ser Ser Leu Glu Ala Ala Ser His
 65 70 75

35 Arg Gly Arg His Glu Arg Pro Ser Ala Thr Thr Gln Cys Pro Val
 80 85 90

Leu Arg Pro Glu Glu Val Leu Glu Ala Asp Thr His Gln Arg Ser
 95 100 105

40 Ile Ser Pro Trp Arg Tyr Arg Val Asp Thr Asp Glu Asp Arg Tyr
 110 115 120

45 Pro Gln Lys Leu Ala Phe Ala Glu Cys Leu Cys Arg Gly Cys Ile
 125 130 135

Asp Ala Arg Thr Gly Arg Glu Thr Ala Ala Leu Asn Ser Val Arg
 140 145 150

| | | | | | | | | | | | | | | | | |
|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| | Leu | Leu | Gln | Ser | Leu | Leu | Val | Leu | Arg | Arg | Arg | Pro | Cys | Ser | Arg | |
| | | | | | 155 | | | | | 160 | | | | | 165 | |
| 5 | Asp | Gly | Ser | Gly | Leu | Pro | Thr | Pro | Gly | Ala | Phe | Ala | Phe | His | Thr | |
| | | | | | 170 | | | | | 175 | | | | | 180 | |
| | Glu | Phe | Ile | His | Val | Pro | Val | Gly | Cys | Thr | Cys | Val | Leu | Pro | Arg | |
| | | | | | 185 | | | | | 190 | | | | | 195 | |
| 10 | Ser | Val | Pro | Asp | Lys | Thr | His | Thr | Cys | Pro | Pro | Cys | Pro | Ala | Pro | |
| | | | | | 200 | | | | | 205 | | | | | 210 | |
| | Glu | Leu | Leu | Gly | Gly | Pro | Ser | Val | Phe | Leu | Phe | Pro | Pro | Lys | Pro | |
| 15 | | | | | 215 | | | | | 220 | | | | | 225 | |
| | Lys | Asp | Thr | Leu | Met | Ile | Ser | Arg | Thr | Pro | Glu | Val | Thr | Cys | Val | |
| | | | | | 230 | | | | | 235 | | | | | 240 | |
| 20 | Val | Val | Asp | Val | Ser | His | Glu | Asp | Pro | Glu | Val | Lys | Phe | Asn | Trp | |
| | | | | | 245 | | | | | 250 | | | | | 255 | |
| | Tyr | Val | Asp | Gly | Val | Glu | Val | His | Asn | Ala | Lys | Thr | Lys | Pro | Arg | |
| | | | | | 260 | | | | | 265 | | | | | 270 | |
| 25 | Glu | Glu | Gln | Tyr | Asn | Ser | Thr | Tyr | Arg | Val | Val | Ser | Val | Leu | Thr | |
| | | | | | 275 | | | | | 280 | | | | | 285 | |
| | Val | Leu | His | Gln | Asp | Trp | Leu | Asn | Gly | Lys | Glu | Tyr | Lys | Cys | Lys | |
| 30 | | | | | 290 | | | | | 295 | | | | | 300 | |
| | Val | Ser | Asn | Lys | Ala | Leu | Pro | Ala | Pro | Ile | Glu | Lys | Thr | Ile | Ser | |
| | | | | | 305 | | | | | 310 | | | | | 315 | |
| 35 | Lys | Ala | Lys | Gly | Gln | Pro | Arg | Glu | Pro | Gln | Val | Tyr | Thr | Leu | Pro | |
| | | | | | 320 | | | | | 325 | | | | | 330 | |
| | Pro | Ser | Arg | Glu | Glu | Met | Thr | Lys | Asn | Gln | Val | Ser | Leu | Thr | Cys | |
| | | | | | 335 | | | | | 340 | | | | | 345 | |
| 40 | Leu | Val | Lys | Gly | Phe | Tyr | Pro | Ser | Asp | Ile | Ala | Val | Glu | Trp | Glu | |
| | | | | | 350 | | | | | 355 | | | | | 360 | |
| | Ser | Asn | Gly | Gln | Pro | Glu | Asn | Asn | Tyr | Lys | Thr | Thr | Pro | Pro | Val | |
| 45 | | | | | 365 | | | | | 370 | | | | | 375 | |
| | Leu | Asp | Ser | Asp | Gly | Ser | Phe | Phe | Leu | Tyr | Ser | Lys | Leu | Thr | Val | |
| | | | | | 380 | | | | | 385 | | | | | 390 | |

Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val
 395 400 405
 5 Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser
 410 415 420
 Leu Ser Pro Gly Lys
 425
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 <211> 212
 <212> PRT
 <213> Homo sapiens
 15 <400> 14
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 20 Leu Gly Leu Leu Leu Val Leu Pro Ala Ala Phe Pro Ala Pro Val
 20 25 30
 Pro Pro Gly Glu Asp Ser Lys Asp Val Ala Ala Pro His Arg Gln
 35 40 45
 25 Pro Leu Thr Ser Ser Glu Arg Ile Asp Lys Gln Ile Arg Tyr Ile
 50 55 60
 30 Leu Asp Gly Ile Ser Ala Leu Arg Lys Glu Thr Cys Asn Lys Ser
 65 70 75
 Asn Met Cys Glu Ser Ser Lys Glu Ala Leu Ala Glu Asn Asn Leu
 80 85 90
 35 Asn Leu Pro Lys Met Ala Glu Lys Asp Gly Cys Phe Gln Ser Gly
 95 100 105
 Phe Asn Glu Glu Thr Cys Leu Val Lys Ile Ile Thr Gly Leu Leu
 110 115 120
 40 Glu Phe Glu Val Tyr Leu Glu Tyr Leu Gln Asn Arg Phe Glu Ser
 125 130 135
 Ser Glu Glu Gln Ala Arg Ala Val Gln Met Ser Thr Lys Val Leu
 140 145 150
 45 Ile Gln Phe Leu Gln Lys Lys Ala Lys Asn Leu Asp Ala Ile Thr
 155 160 165

Thr Pro Asp Pro Thr Thr Asn Ala Ser Leu Leu Thr Lys Leu Gln
 170 175 180
 5 Ala Gln Asn Gln Trp Leu Gln Asp Met Thr Thr His Leu Ile Leu
 185 190 195
 Arg Ser Phe Lys Glu Phe Leu Gln Ser Ser Leu Arg Ala Leu Arg
 200 205 210
 10 Gln Met
 212
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 15 <211> 320
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 <213> Homo sapiens
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 1 5 10 15
 Leu Gly Leu Leu Leu Leu Leu Leu Gly Val Leu Ala Pro Gly Gly
 20 25 30
 25 Ala Ser Leu Arg Leu Leu Asp His Arg Ala Leu Val Cys Ser Gln
 35 40 45
 Pro Gly Leu Asn Cys Thr Val Lys Asn Ser Thr Cys Leu Asp Asp
 30 50 55 60
 Ser Trp Ile His Pro Arg Asn Leu Thr Pro Ser Ser Pro Lys Asp
 65 70 75
 35 Leu Gln Ile Gln Leu His Phe Ala His Thr Gln Gln Gly Asp Leu
 80 85 90
 Phe Pro Val Ala His Ile Glu Trp Thr Leu Gln Thr Asp Ala Ser
 95 100 105
 40 Ile Leu Tyr Leu Glu Gly Ala Glu Leu Ser Val Leu Gln Leu Asn
 110 115 120
 Thr Asn Glu Arg Leu Cys Val Arg Phe Glu Phe Leu Ser Lys Leu
 45 125 130 135
 Arg His His His Arg Arg Trp Arg Phe Thr Phe Ser His Phe Val
 140 145 150

Val Asp Pro Asp Gln Glu Tyr Glu Val Thr Val His His Leu Pro
 155 160 165
 5 Lys Pro Ile Pro Asp Gly Asp Pro Asn His Gln Ser Lys Asn Phe
 170 175 180
 Leu Val Pro Asp Cys Glu His Ala Arg Met Lys Val Thr Thr Pro
 185 190 195
 10 Cys Met Ser Ser Gly Ser Leu Trp Asp Pro Asn Ile Thr Val Glu
 200 205 210
 Thr Leu Glu Ala His Gln Leu Arg Val Ser Phe Thr Leu Trp Asn
 15 215 220 225
 Glu Ser Thr His Tyr Gln Ile Leu Leu Thr Ser Phe Pro His Met
 230 235 240
 20 Glu Asn His Ser Cys Phe Glu His Met His His Ile Pro Ala Pro
 245 250 255
 Arg Pro Glu Glu Phe His Gln Arg Ser Asn Val Thr Leu Thr Leu
 260 265 270
 25 Arg Asn Leu Lys Gly Cys Cys Arg His Gln Val Gln Ile Gln Pro
 275 280 285
 Phe Phe Ser Ser Cys Leu Asn Asp Cys Leu Arg His Ser Ala Thr
 30 290 295 300
 Val Ser Cys Pro Glu Met Pro Asp Thr Pro Glu Pro Ile Pro Asp
 305 310 315
 35 Tyr Met Pro Leu Trp
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<210> 16

<211> 543

40 <212> DNA

<213> Homo sapiens

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 ggacctgggc cctggcccct ggccctcacc aggtgccact ggacctggtg 150

F00150-30219000

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 tggggctaca gcatcaacca cgaccccagc cgtatccccg tggacctgcc 350
 10 ggaggcacgg tgccgtgtgc tgggctgtgt gaacccttc accatgcagg 400
 aggaccgcag catggtgagc gtgccggtgt tcagccaggt tcctgtgcgc 450
 cgccgcctct gcccgccacc gcccgcaca gggccttgcc gccagcgcgc 500
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 30 ctgctggctc gaggtgccaa gtgggggcag gctttgcctg tagccctggc 200
 gtccagcctg gaggcagcaa gccacagggg gaggcacgag aggcctcag 250
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 35 40 45
 Asn Gln Leu Val Val Pro Ser Glu Gly Leu Tyr Leu Ile Tyr Ser
 50 55 60
 30 Gln Val Leu Phe Lys Gly Gln Gly Cys Pro Ser Thr His Val Leu
 65 70 75
 Leu Thr His Thr Ile Ser Arg Ile Ala Val Ser Tyr Gln Thr Lys
 80 85 90
 35 Val Asn Leu Leu Ser Ala Ile Lys Ser Pro Cys Gln Arg Glu Thr
 95 100 105
 Pro Glu Gly Ala Glu Ala Lys Pro Trp Tyr Glu Pro Ile Tyr Leu
 110 115 120
 Gly Gly Val Phe Gln Leu Glu Lys Gly Asp Arg Leu Ser Ala Glu
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 Tyr Phe Gly Ile Ile Ala Leu

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 40 35 40 45
 Pro Gly Leu Asn Cys Thr Val Lys Asn Ser Thr Cys Leu Asp Asp
 50 55 60
 45 Ser Trp Ile His Pro Arg Asn Leu Thr Pro Ser Ser Pro Lys Asp
 65 70 75

| | | | | | | | | | | | | | | | | |
|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | Leu | Gln | Ile | Gln | Leu | His | Phe | Ala | His | Thr | Gln | Gln | Gly | Asp | Leu | |
| | | | | | 80 | | | | | 85 | | | | | | 90 |
| 5 | Phe | Pro | Val | Ala | His | Ile | Glu | Trp | Thr | Leu | Gln | Thr | Asp | Ala | Ser | |
| | | | | | 95 | | | | | 100 | | | | | | 105 |
| | Ile | Leu | Tyr | Leu | Glu | Gly | Ala | Glu | Leu | Ser | Val | Leu | Gln | Leu | Asn | |
| | | | | | 110 | | | | | 115 | | | | | | 120 |
| 10 | Thr | Asn | Glu | Arg | Leu | Cys | Val | Arg | Phe | Glu | Phe | Leu | Ser | Lys | Leu | |
| | | | | | 125 | | | | | 130 | | | | | | 135 |
| | Arg | His | His | His | Arg | Arg | Trp | Arg | Phe | Thr | Phe | Ser | His | Phe | Val | |
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| 15 | Val | Asp | Pro | Asp | Gln | Glu | Tyr | Glu | Val | Thr | Val | His | His | Leu | Pro | |
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| 20 | Lys | Pro | Ile | Pro | Asp | Gly | Asp | Pro | Asn | His | Gln | Ser | Lys | Asn | Phe | |
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| | Leu | Val | Pro | Asp | Cys | Glu | His | Ala | Arg | Met | Lys | Val | Thr | Thr | Pro | |
| | | | | | 185 | | | | | 190 | | | | | | 195 |
| 25 | Cys | Met | Ser | Ser | Gly | Ser | Leu | Trp | Asp | Pro | Asn | Ile | Thr | Val | Glu | |
| | | | | | 200 | | | | | 205 | | | | | | 210 |
| | Thr | Leu | Glu | Ala | His | Gln | Leu | Arg | Val | Ser | Phe | Thr | Leu | Trp | Asn | |
| | | | | | 215 | | | | | 220 | | | | | | 225 |
| 30 | Glu | Ser | Thr | His | Tyr | Gln | Ile | Leu | Leu | Thr | Ser | Phe | Pro | His | Met | |
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| | Glu | Asn | His | Ser | Cys | Phe | Glu | His | Met | His | His | Ile | Pro | Ala | Pro | |
| 35 | | | | | 245 | | | | | 250 | | | | | | 255 |
| | Arg | Pro | Glu | Glu | Phe | His | Gln | Arg | Ser | Asn | Val | Thr | Leu | Thr | Leu | |
| | | | | | 260 | | | | | 265 | | | | | | 270 |
| 40 | Arg | Asn | Leu | Lys | Gly | Cys | Cys | Arg | His | Gln | Val | Gln | Ile | Gln | Pro | |
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| | Phe | Phe | Ser | Ser | Cys | Leu | Asn | Asp | Cys | Leu | Arg | His | Ser | Ala | Thr | |
| | | | | | 290 | | | | | 295 | | | | | | 300 |
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<400> 24

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| 10 | Met | Thr | Leu | Leu | Pro | Gly | Leu | Leu | Phe | Leu | Thr | Trp | Leu | His | Thr |
| | 1 | | | | 5 | | | | | 10 | | | | | 15 |
| | Cys | Leu | Ala | His | His | Asp | Pro | Ser | Leu | Arg | Gly | His | Pro | His | Ser |
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| 15 | His | Gly | Thr | Pro | His | Cys | Tyr | Ser | Ala | Glu | Glu | Leu | Pro | Leu | Gly |
| | | | | | 35 | | | | | 40 | | | | | 45 |
| | Gln | Ala | Pro | Pro | His | Leu | Leu | Ala | Arg | Gly | Ala | Lys | Trp | Gly | Gln |
| 20 | | | | | 50 | | | | | 55 | | | | | 60 |
| | Ala | Leu | Pro | Val | Ala | Leu | Val | Ser | Ser | Leu | Glu | Ala | Ala | Ser | His |
| | | | | | 65 | | | | | 70 | | | | | 75 |
| 25 | Arg | Gly | Arg | His | Glu | Arg | Pro | Ser | Ala | Thr | Thr | Gln | Cys | Pro | Val |
| | | | | | 80 | | | | | 85 | | | | | 90 |
| | Leu | Arg | Pro | Glu | Glu | Val | Leu | Glu | Ala | Asp | Thr | His | Gln | Arg | Ser |
| | | | | | 95 | | | | | 100 | | | | | 105 |
| 30 | Ile | Ser | Pro | Trp | Arg | Tyr | Arg | Val | Asp | Thr | Asp | Glu | Asp | Arg | Tyr |
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| | Pro | Gln | Lys | Leu | Ala | Phe | Ala | Glu | Cys | Leu | Cys | Arg | Gly | Cys | Ile |
| 35 | | | | | 125 | | | | | 130 | | | | | 135 |
| | Asp | Ala | Arg | Thr | Gly | Arg | Glu | Thr | Ala | Ala | Leu | Asn | Ser | Val | Arg |
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| 40 | Leu | Leu | Gln | Ser | Leu | Leu | Val | Leu | Arg | Arg | Arg | Pro | Cys | Ser | Arg |
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| | Asp | Gly | Ser | Gly | Leu | Pro | Thr | Pro | Gly | Ala | Phe | Ala | Phe | His | Thr |
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| 10 | Met | Ala | Lys | Val | Pro | Asp | Met | Phe | Glu | Asp | Leu | Lys | Asn | Cys | Tyr |
| | 1 | | | | 5 | | | | | 10 | | | | | 15 |
| | Ser | Glu | Asn | Glu | Glu | Asp | Ser | Ser | Ser | Ile | Asp | His | Leu | Ser | Leu |
| | | | | | 20 | | | | | 25 | | | | | 30 |
| 15 | Asn | Gln | Lys | Ser | Phe | Tyr | His | Val | Ser | Tyr | Gly | Pro | Leu | His | Glu |
| | | | | | 35 | | | | | 40 | | | | | 45 |
| | Gly | Cys | Met | Asp | Gln | Ser | Val | Ser | Leu | Ser | Ile | Ser | Glu | Thr | Ser |
| 20 | | | | | 50 | | | | | 55 | | | | | 60 |
| | Lys | Thr | Ser | Lys | Leu | Thr | Phe | Lys | Glu | Ser | Met | Val | Val | Val | Ala |
| | | | | | 65 | | | | | 70 | | | | | 75 |
| 25 | Thr | Asn | Gly | Lys | Val | Leu | Lys | Lys | Arg | Arg | Leu | Ser | Leu | Ser | Gln |
| | | | | | 80 | | | | | 85 | | | | | 90 |
| | Ser | Ile | Thr | Asp | Asp | Asp | Leu | Glu | Ala | Ile | Ala | Asn | Asp | Ser | Glu |
| | | | | | 95 | | | | | 100 | | | | | 105 |
| 30 | Glu | Glu | Ile | Ile | Lys | Pro | Arg | Ser | Ala | Pro | Phe | Ser | Phe | Leu | Ser |
| | | | | | 110 | | | | | 115 | | | | | 120 |
| | Asn | Val | Lys | Tyr | Asn | Phe | Met | Arg | Ile | Ile | Lys | Tyr | Glu | Phe | Ile |
| 35 | | | | | 125 | | | | | 130 | | | | | 135 |
| | Leu | Asn | Asp | Ala | Leu | Asn | Gln | Ser | Ile | Ile | Arg | Ala | Asn | Asp | Gln |
| | | | | | 140 | | | | | 145 | | | | | 150 |
| 40 | Tyr | Leu | Thr | Ala | Ala | Ala | Leu | His | Asn | Leu | Asp | Glu | Ala | Val | Lys |
| | | | | | 155 | | | | | 160 | | | | | 165 |
| | Phe | Asp | Met | Gly | Ala | Tyr | Lys | Ser | Ser | Lys | Asp | Asp | Ala | Lys | Ile |
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| 45 | Thr | Val | Ile | Leu | Arg | Ile | Ser | Lys | Thr | Gln | Leu | Tyr | Val | Thr | Ala |
| | | | | | 185 | | | | | 190 | | | | | 195 |

Gln Asp Glu Asp Gln Pro Val Leu Leu Lys Glu Met Pro Glu Ile
 200 205 210
 5 Pro Lys Thr Ile Thr Gly Ser Glu Thr Asn Leu Leu Phe Phe Trp
 215 220 225
 Glu Thr His Gly Thr Lys Asn Tyr Phe Thr Ser Val Ala His Pro
 230 235 240
 10 Asn Leu Phe Ile Ala Thr Lys Gln Asp Tyr Trp Val Cys Leu Ala
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 Gly Gly Pro Pro Ser Ile Thr Asp Phe Gln Ile Leu Glu Asn Gln
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 15 Ala
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 35 40 45
 Lys Thr Phe Tyr Leu Arg Asn Asn Gln Leu Val Ala Gly Tyr Leu
 50 55 60
 Gln Gly Pro Asn Val Asn Leu Glu Glu Lys Ile Asp Val Val Pro
 65 70 75
 40 Ile Glu Pro His Ala Leu Phe Leu Gly Ile His Gly Gly Lys Met
 80 85 90
 Cys Leu Ser Cys Val Lys Ser Gly Asp Glu Thr Arg Leu Gln Leu
 95 100 105
 45 Glu Ala Val Asn Ile Thr Asp Leu Ser Glu Asn Arg Lys Gln Asp
 110 115 120

Lys Arg Phe Ala Phe Ile Arg Ser Asp Ser Gly Pro Thr Thr Ser
125 130 135

5 Phe Glu Ser Ala Ala Cys Pro Gly Trp Phe Leu Cys Thr Ala Met
140 145 150

Glu Ala Asp Gln Pro Val Ser Leu Thr Asn Met Pro Asp Glu Gly
155 160 165

10 Val Met Val Thr Leu Phe Tyr Phe Gln Glu Asp Glu
170 175 177